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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,497	10/08/2003	Stephen G. Bales	LA 001	5906
48373	7590	12/01/2006	EXAMINER	
STEPHEN G. BALES 17 HART LANE SEWELL, NJ 08080			DANIELS, MATTHEW J	
			ART UNIT	PAPER NUMBER

1732

DATE MAILED: 12/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/681.497

[illegible]

BALES, STEPHEN G.

Examiner

Matthew J. Daniels

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on *28 August 2006 and 18 September 2006.*
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-12,14-18,20-22,24-27,30 and 31 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-12,14-18,20-22,24-27,30 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment/Affidavit under 37 CFR 1.131

1. In the interview held 25 July 2006, the Examiner agreed to enter claim amendments which would overcome the rejection under 35 USC 112, first paragraph, by returning the “new matter” to the values previously considered. Applicant filed the claim amendments on 28 August 2006, and subsequently filed the appeal brief on 18 September 2006 before the claim amendments were entered by the Examiner. This supplemental action revises the rejection to address the 28 August 2006 claim amendments. If Applicant wishes the appeal to proceed, the Applicant should file an appeal brief in response to this action to ensure that the instant claim rejections are argued.
2. The affidavit filed on 28 August 2006 under 37 CFR 1.131 has been considered but is ineffective to overcome the Manning reference (2003/0071389). The evidence submitted is insufficient to establish a conception of the invention prior to the effective date of the Manning reference. While conception is the mental part of the inventive act, it must be capable of proof, such as by demonstrative evidence or by a complete disclosure to another. Conception is more than a vague idea of how to solve a problem. The requisite means themselves and their interaction must also be comprehended. See *Mergenthaler v. Scudder*, 1897 C.D. 724, 81 O.G. 1417 (D.C. Cir. 1897). There is no evidence of the date of conception of the claimed invention.

Information Disclosure Statement

3. The information disclosure statement filed 16 September 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The second reference (Briggs) does not appear to be present in the file. A copy is requested for proper consideration.

Specification

4. The amendments to the specification filed 21 July 2006 removed the new matter from the specification added in the 7 December 2005 and 29 December 2005 responses.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. The rejection of Claims 1, 2, 16, 17 set forth previously under this section is withdrawn in view of the claim amendments.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or

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improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. **Claims 1-11, 14-27, and 31** are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,2,5-7,10-12, 15-17, and 20 of copending Application No. 11/149,808 in view of Ohkawa (USPN 4891399).

Instant Claims 1 and 16 and Claims 1 and 11 of the '808 application are both drawn to methods for making lignocellulosic products containing a boron-containing compound. Instant Claims 1 and 16 are different because they are directed to a boron-containing fungicide and not to a borate compound. However, borate compounds are claimed in the instant application in Claims 6-11, 14, and 22-27. Claims 1 and 11 of the '808 application are different because they include zinc oxide and forming by heat and pressure. However, these differences would have been obvious because forming thermoplastic materials obviously requires heat and pressure, and because zinc oxide is a common and obvious filler in thermoplastic materials (See Ohkawa, Abstract). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate zinc oxide as a filler in the instant invention in order to reduce the cost of the product.

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Instant Claims 4, 5, 15, 20, 21, and 31 are drawn to polymers and lignocellulosic fillers. However, these aspects are obvious over Claims 2, 5, 12, and 15 of the '808 application which claim the same polymers and lignocellulosic fillers.

Instant Claims 2, 4, and 17-19 are drawn to the amount of boron-containing fungicide. However, these aspects are obvious over Claims 6, 7, 16, and 17 of the '808 application, which claim the same amounts.

This is a provisional obviousness-type double patenting rejection.

7. **Claims 1-4, 6-11, 14-20, 22-27, and 31** are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of copending Application No. 10/909,053 in view of Nadkarni (USPN 5514478).

Instant Claims 1 and 16 and Claim 1 of the '053 application are both drawn to methods for making lignocellulosic products containing a boron-containing compound. Instant Claims 1 and 16 are different because they are directed to a boron-containing fungicide and not to a borate compound. However, borate compounds are claimed in the instant application in Claims 6-11, 14, and 22-27. Claims 1 of the '053 application is different because it includes a dust reducing amount of moisture prior to forming the composite. However, this difference would have been prima facie obvious to one of ordinary skill for two reasons: 1) firstly, because borates including zinc borate are known to be hydrophilic (Nadkarni, 4:44-55); and 2) because the common commercial form of zinc borate is the hydrated form, which contains between 1 and 20% moisture as now claimed in the '053 application. In view of Nadkarni's teachings and the

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hydrated form of zinc borate being the commercial form, it would have been inherent or obvious that zinc borate or other borates would contain a percentage of water.

Instant Claims 6-11 and 22-25 are drawn to particular borates. However, these aspects are obvious over Claims 2-9 of the '053 application which claim the same borates.

Instant Claims 2-3, and 17-19 are drawn to the amount of boron-containing fungicide. However, these aspects are obvious over Claims 2 and 5 of the '053 application, which claim the same amounts.

Instant Claims 4, 15, 20 and 31 are drawn to particular lignocellulosic fillers. However, these aspects are obvious over Claims 10 and 11 of the '053 application, which claim the same lignocellulosic filler.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. **Claims 1, 4, 5, 11, 14-16, 20, 21, and 31** are rejected under 35 U.S.C. 102(b) as anticipated by Aida (USPN 5221781).

As to **Claim 1**, Aida teaches a method for forming lignocellulosic thermoplastic composite products comprising incorporating an amount of boron-containing fungicide prior to forming the composite product (3:39-55, 6:18-21, 6:62-7:20).

Although Aida does not explicitly teach that the boron-containing compound acts as a fungicide, Aida teaches a boron-containing material that is the same as claimed (zinc borate, see instant Claim 14) having an amount the same or substantially the same as desired by Applicant (see 3-5% in instant Claim 3). Therefore, the fungicidal action would have been inherent. **As to Claims 4 and 5**, Aida teaches at least wood and polyethylene (6:19 and 3:39-45). **As to Claim 11**, Aida teaches zinc borate (6:67). **As to Claims 14 and 15**, Aida teaches at least zinc borate and wood (6:67 and 6:19).

As to Claim 16, Aida teaches a method for forming lignocellulosic thermoplastic composite products comprising incorporating an amount of boron-containing fungicide prior to forming the composite product (3:39-55, 6:18-21, 6:62-7:20). Although Aida does not explicitly teach that the boron-containing compound acts as a fungicide and increases resistance to fungal attack, Aida teaches a boron-containing material that is the same as claimed (zinc borate, see instant Claim 27) having an amount the same as desired by Applicant (see 0.1-5% in instant Claim 3). Therefore, the fungicidal action and resistance to fungal attack would have been inherent. **As to Claims 20, 21, and 31**, Aida teaches at least wood and polyethylene (6:19 and 3:42).

9. **Claims 2 and 17** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Aida (USPN 5221781). **As to Claim 2**, Aida teaches a method for forming lignocellulosic thermoplastic composite products comprising incorporating an amount of boron-containing fungicide prior to forming the composite product (3:39-55, 6:18-21, 6:62-7:20). Aida further teaches the following ranges:

100 parts resin (6:24-25)

5-200 parts organic fillers including wood powder (6:19-25)

5-200 parts of compounds including zinc borate (7:12-15)

In the Examiner's interpretation, sufficient specificity exists to anticipate the claimed range. Values within these ranges, such as 100 parts resin, 100 parts organic fillers, and 7 parts zinc borate, would fall within the claimed zinc borate range (7 parts zinc borate amounts to 3.4% by weight). In the alternative, the claimed range would have been prima facie obvious over Aida's teachings to use the materials in combinations of two or more (7:4-5 and 7:33-34) and to adjust these ranges (7:12-28), making the amount of zinc borate a result-effective variable.

Although Aida does not explicitly teach that the boron-containing compound acts as a fungicide, Aida teaches a boron-containing material that is the same as claimed (zinc borate, see instant Claim 14) having an amount the same or substantially the same as desired by Applicant. Therefore, the fungicidal action would have been inherent. **As to Claim 17**, Aida teaches a method for forming lignocellulosic thermoplastic composite products comprising incorporating an amount of boron-containing fungicide prior to forming the composite product (3:39-55, 6:18-21, 6:62-7:20). Aida further teaches the following ranges:

100 parts resin (6:24-25)

5-200 parts organic fillers including wood powder (6:19-25)

5-200 parts of compounds including zinc borate (7:12-15)

In the Examiner's interpretation, sufficient specificity exists to anticipate the claimed range. Values within these ranges, such as 100 parts resin, 100 parts organic fillers, and 7 parts zinc borate, would fall within the claimed zinc borate range (7 parts zinc borate amounts to 3.4%

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by weight). In the alternative, the claimed range would have been prima facie obvious over Aida's teachings to use the materials in combinations of two or more (7:4-5 and 7:33-34) and to adjust these ranges (7:12-28), making the amount of zinc borate a result-effective variable.

Although Aida does not explicitly teach that the boron-containing compound acts as a fungicide and increases resistance to fungal attack, Aida teaches a boron-containing material that is the same as claimed (zinc borate, see instant Claim 27) having an amount the same as desired by Applicant. Therefore, the fungicidal action and resistance to fungal attack would have been inherent.

10. **Claims 3 and 18** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Aida (USPN 5221781). Aida teaches the subject matter of Claims 1 and 16 above under 35 USC 102(b). **As to Claim 3**, Aida teaches the following ranges:

100 parts resin (6:24-25)

5-200 parts organic fillers including wood powder (6:19-25)

5-200 parts of compounds including zinc borate (7:12-15)

In the Examiner's interpretation, sufficient specificity exists to anticipate the claimed range. Values within these ranges, such as 100 parts resin, 100 parts organic fillers, and 7 parts zinc borate, would fall within the claimed zinc borate range (7 parts zinc borate amounts to 3.4% by weight). In the alternative, the claimed range would have been prima facie obvious over Aida's teachings to use the materials in combinations of two or more (7:4-5 and 7:33-34) and to

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adjust these ranges (7:12-28), making the amount of zinc borate a result-effective variable. **As to Claim 18**, Aida teaches the following ranges:

100 parts resin (6:24-25)

5-200 parts organic fillers including wood powder (6:19-25)

5-200 parts of compounds including zinc borate (7:12-15)

In the Examiner's interpretation, sufficient specificity exists to anticipate the claimed range. Values within these ranges, such as 100 parts resin, 200 parts organic fillers, and 5 parts zinc borate, would fall within the claimed zinc borate range (5 parts zinc borate amounts to 1.6% by weight). In the alternative, the claimed range would have been prima facie obvious over Aida's teachings to use the materials in combinations of two or more (7:4-5 and 7:33-34), which would reduce the amount of zinc borate used to within the claimed range, and to adjust these ranges (7:12-28), making the amount of zinc borate a result-effective variable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claims 6, 8-12, 18, 22, 24-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Aida (USPN 5221781) in view of Lloyd (USPN 6368529). Aida teaches the subject matter of Claims 1 and 16. See the rejections of Claims 1 and 16 under 35 USC 102(b). **As to Claim 6**, Lloyd teaches calcium borate (Abstract). It would have been prima facie obvious to one of

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ordinary skill in the art at the time of the invention to incorporate the method of Lloyd into that of Aida because Lloyd teaches that an additional advantage of producing products with calcium borate in place of conventionally used zinc borate is that the calcium borates (a) have much better flow properties, making them easier to store and handle in processing equipment (9:1-5) and (b) cause less premature wear and failure (1:52-55), and (c) are less toxic than the zinc borates. **As to Claims 8-11**, Lloyd teaches at least calcium polytriborate (3:39) that is either natural or synthetic (3:39-41), and nobleite (3:42). **As to Claim 12**, Lloyd teaches colemanite (3:30-45, especially 3:41). **As to Claim 18**, Lloyd teaches the claimed ranges (3:52-63). **As to Claims 22, 24-27**, Lloyd teaches at least calcium polytriborate (3:39) that is either natural or synthetic (3:39-41), and nobleite (3:42).

12. **Claim 30** is rejected under 35 U.S.C. 103(a) as being unpatentable over Aida (USPN 5221781) in view of Chow (USPN 5130352). Aida teaches the subject matter of Claim 16. See the rejection of Claim 16 under 35 USC 102(b). **As to Claim 30**, Chow teaches boric acid in polyethylene (2:41-65). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Chow into that of Aida in order to suppress odor (2:36-40).

Response to Arguments

13. Applicant's arguments filed 28 August 2006 have been fully considered but they are not persuasive. The arguments appear to be on the following grounds:

a) An affidavit under 37 CFR 1.131 was filed to antedate US 2003/0071389 to Manning.

- b) Mohs hardness data is presented
- c) Haddon's teaching is a broad based assumption which should be examined in light of the existing toxilogical information.
- d) Pera explains that calcium pyroborate is a synthetic (calcium) borate.

14. These arguments are not persuasive for the following reasons:

- a) There is insufficient evidence of conception in the affidavit, thus it is not sufficient to overcome the reference to Manning.
- b) Applicant concludes that hardness and tool wear rate are correlated. This assertion is unsupported.
- c and d) Applicant's argument is unclear. There is no information disclosure statement citing the Pera reference.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

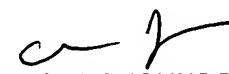
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJD 11/16/06




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11/28/06